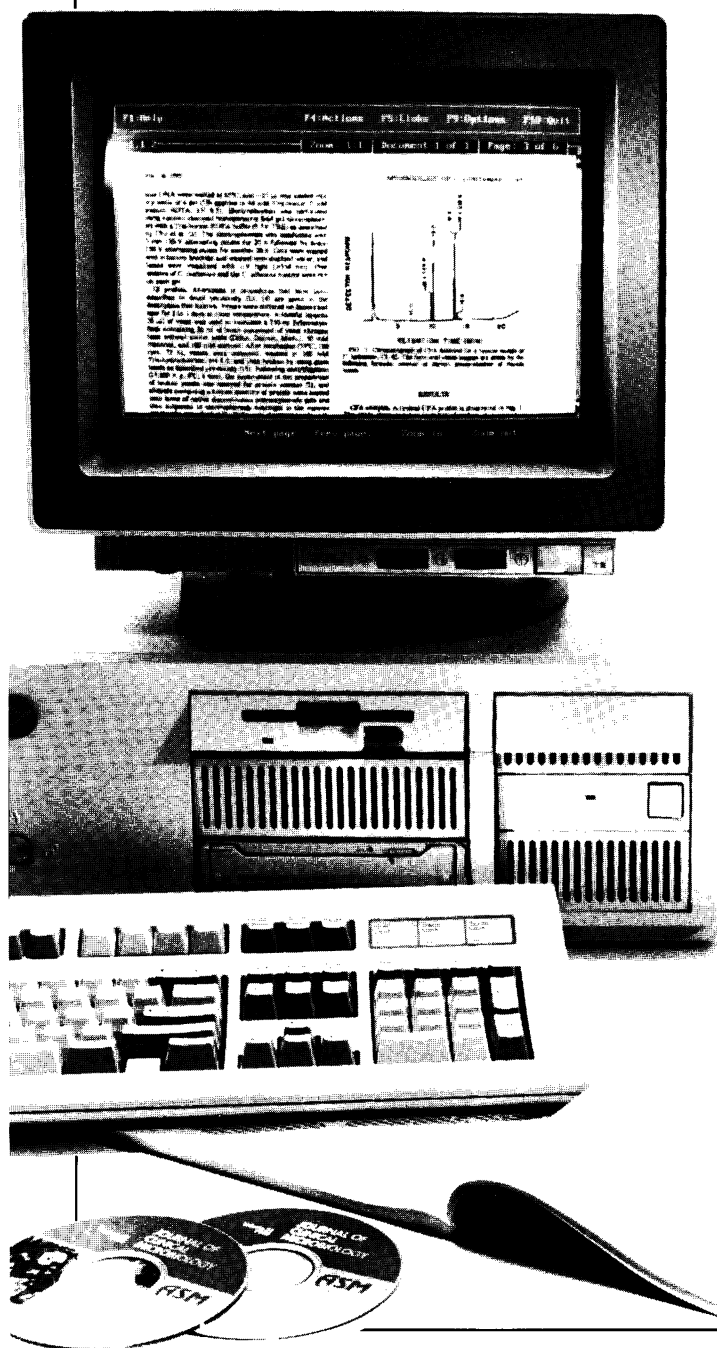


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Microbial Cell Surface Hydrophobicity

Edited by R. J. Doyle and Mel Rosenberg

Despite the voluminous journal literature on the hydrophobicity of microorganisms, its structural basis, and its role in microbial adhesion to surfaces, in differentiation, and in morphogenesis, this is the first book devoted to this subject. There has been a growing realization that hydrophobic interactions play a role in many, if not most, microbial adhesion phenomena, including microbial adhesion to soft host tissues, implants and prostheses, contact lenses, glass, oil, steel, teeth, submerged aquatic surfaces, plants, and fish. The authors in this book were selected based on their substantial contributions to the field. Medical, applied, and environmental microbiologists; environmental, microbial, and petroleum engineers; infectious-disease physicians and researchers; and oral biologists will all benefit from this excellent summary and review.

CONTENTS

Microbial Cell Surface Hydrophobicity: History, Measurement, and Significance (*M. Rosenberg and Doyle*); Nature of the Hydrophobic Effect (*Duncan-Hewitt*); Microbial Hydrophobicity and Fermentation Technology (*Mozes and Rouxhet*); Role of Hydrophobic Interactions in Microbial Adhesion to Plastics Used in Medical Devices (*Klotz*); Hydrophobicity of Proteins and Bacterial Fimbriae (*Irvine*); Adhesion of Bacteria to Plant Cells (*Smit and Stacey*); Hydrophobicity in the Aquatic Environment (*Bar-Or*); Changes in Bacterial Surface Hydrophobicity during Morphogenesis and Differentiation (*E. Rosenberg and Sar*); Cell Surface Hydrophobicity of Medically Important Fungi, especially *Candida* Species (*Hazen*); Significance of Hydrophobicity in the Adhesiveness of Pathogenic Gram-Negative Bacteria (*Lachica*); Hydrophobic Characteristics of Staphylococci (*Wadstrom*); Relative Importance of Surface Free Energy as a Hydrophobicity Measure in Bacterial Adhesion to Solid Surfaces (*Busscher, Sjollem, and van der Mei*); Hydrophobicity of Group A Streptococci and Its Relationship to Adhesion of Streptococci to Host Cells (*Courtney, Hastly, and Ofek*); Hydrophobicity of Oral Bacteria (*Doyle, M. Rosenberg, and Drake*)

Hardcover (ISBN 1-55581-028-4). November 1990. 435 pages, illustrated, index. Member, \$52.00; Nonmember, \$65.00. (Canadian customers add 7% G.S.T.) Shipping charges: U.S., \$1.50/book (1-3 copies) or \$0.75/book (4+ copies); non-U.S., \$2.50/book (1-3 copies) or \$1.25/book (4+ copies). When ordering, specify offer number MR 12/92-028-4.

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PSEUDOMONAS

Molecular Biology and Biotechnology

Edited by Enrica Galli, University of Milan, Milan, Italy; Simon Silver, University of Illinois, Chicago; and Bernard Witholt, University of Groningen, Groningen, The Netherlands

PUBLISHED by ASM in cooperation with the Federation of European Microbiological Societies (FEMS), this new book gathers and summarizes the latest developments in international research on *Pseudomonas* species. The contributors are representative of the science from many countries. Areas of emphasis include the molecular biology, biotechnological and industrial applications, and involvement in human and plant pathogenesis of pseudomonads. Chapters expand on the initial presentations of world experts at the Third International Symposium (Trieste, Italy, June 1991). These contents will be important for anyone interested in the various abilities and uses for pseudomonads. Students and workers concentrating on related groups of bacteria who need to understand how modern microbiology is developing, including such controversial topics as environmental release of genetically engineered microorganisms, will find this book a useful signpost.

CONDENSED CONTENTS

Pseudomonas in the Late Twentieth Century (*B. W. Holloway*); A Common System of Nomenclature for the Physical Map of the Chromosome of *Pseudomonas aeruginosa* PAO (*Timmmer et al.*)

- Part 1. Bacterium-Plant Interactions (6 chapters by Lugtenberg et al., Hirano and Upper, Leong et al., Vivian, Durbin, and Bender et al.)
- Part 2. Molecular Mechanisms of Animal Pathogenicity (4 chapters by Maharaj et al., Goldberg, Lazdunski et al., and Visca et al.)
- Part 3. Taxonomy and Identification (3 chapters by Palleroni, Höfle, and Schleifer et al.)
- Part 4. Cell Envelope and Transport (5 chapters by Feingold, Nikaïdo, Quinn, Coleman et al., and Bellido et al.)
- Part 5. Metabolism and Regulation (9 chapters by Haas et al., Cuyper and Zumft, MacGregor et al., Drew and Wilson, Kok et al., Harayama et al., Golovleva et al., Palmer et al., and Ronald et al.)
- Part 6. Biotechnology: Biodegradation and Industrial Products (6 chapters by Furukawa et al., Galli et al., Pieper et al., Imai et al., Witholt et al., and Steinbüchel et al.)
- Part 7. Biotechnology: Manipulation, Cloning, and Vectors (4 chapters by Boronin, Williams et al., Nakazawa et al., and Dehò et al.)
- Part 8. *Rhodobacter*: a Photosynthetic Pseudomonad (3 chapters by Kaplan and Lee, Drews et al., and Vignais et al.)
- Part 9. Environmental Release (4 chapters by Lindow, Dowling et al., de Lorenzo and Timmis, and Duque et al.)

Estimated publication date: July 1992. Hardcover (ISBN 1-55581-051-9), approximately 456 pages, illustrated, color plates, index. Prices: Member (ASM, FEMS), \$79.00; Nonmember, \$89.00. Canadian prices (include 7% G.S.T.): Member (ASM, FEMS), \$84.53; Nonmember, \$95.23. Shipping charges: U.S., 1-3 copies = \$2.50/book; 4+ copies = \$1.75/book. Non-U.S., 1-3 copies = \$4.50/book; 4+ copies = \$2.25/book.

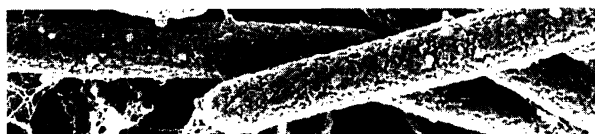
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Microbial Cell-Cell Interactions



Edited by **Martin Dworkin**,
University of Minnesota, Minneapolis

This well-considered compilation of reviews and discussions has as one central theme that the historical concept of microbes as essentially unicellular organisms existing independently of other organisms is conceptually incomplete and misleading; instead, microbial systems manifest a variety of cell-cell interactions and a real understanding, not only of the role of the microbe in nature but also of the nature of the microbe itself, requires that researchers begin to think of microbes as interacting biochemically, genetically, and physiologically with each other. Thus considered, it becomes apparent that the variety of cell-cell interactions manifested by microbial systems represent excellent model systems for examining the mechanistic bases of the cell-cell interactions themselves, with application to the study of multicellular interactions in higher organisms. The authors provide a representative sampling of the types of interactions among microbes, including mating interactions, developmental interactions, ecological/colonization interactions, and predator-prey interactions.

This book is directed toward any microbiologist who must deal in a practical sense or in a research context with cell-cell interactions, as exemplified by examinations of mechanisms of pathogenesis, ecological interactions, mechanisms of mating, developmental biology, predator-prey interactions, plant-microbe interactions, and formation of mixed culture communities.

CONTENTS

1. **Introduction** (*Dworkin*); 2. **Mating Interactions in Gram-Positive Bacteria** (*Dunny*); 3. **Conjugation among Enteric Bacteria** (*Ippen-Ihler and Maneewannakul*); 4. ***Chlamydomonas* Mating Interactions** (*Goodenough*); 5. **Cell-Cell Interactions Involved in Yeast Mating** (*Kurjan*); 6. **Intercellular Interactions during *Dictyostelium* Development** (*Schaap*); 7. **Cell-Cell Interactions in Myxobacteria** (*Dworkin*); 8. **Role of Intercellular Chemical Communication in the *Vibrio fischeri*-Monocentric Fish Symbiosis** (*Dunlap and Greenberg*); 9. **Rhizobium-Legume Symbiosis** (*Roth and Stacey*); 10. **Coaggregation: Adherence in the Human Oral Microbial Ecosystem** (*Kolenbrander*); 11. **Intercellular Signalling in the *Bdellovibrio* Developmental Cycle** (*Gray and Ruby*)

November 1991. Hardcover (ISBN 1-55581-037-3). 382 pages, illustrated, index.

Prices: Member, \$59.00; Nonmember, \$69.00. **Canadian prices (include 7% G.S.T.):** Member, \$63.13; Nonmember, \$73.83. **Shipping charges (orders postmarked after 31 December 1991):** U.S., 1-3 copies = \$2.50/book; 4+ copies = \$1.25/book. Non-U.S., 1-3 copies = \$4.50/book; 4+ copies = \$2.25/book. **Offer number:** MR-037-3.

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MODELING THE ENVIRONMENTAL FATE OF MICROORGANISMS

Edited by **Christon J. Hurst** *U.S. Environmental Protection Agency, Cincinnati, Ohio*

Uniquely written
for microbiologists
and modelers

The movement and survival of microorganisms in the environment, whether infectious contaminants or beneficial GEMs, is a topic of vital importance to scientists in many fields, including pollution and public health research, wastewater treatment and disinfection, plant pathology, soil science and geology, bioremediation, and applied microbiology and virology. Well-constructed statistical models are an essential tool in all of these areas.

This book is a unique synthesis, written both for microbiologists interested in the application of statistical models to their work and for engineers and statisticians who have little experience in microbiology. Its five sections present not only microbiological studies but also their mathematical assessment; not only equations and statistical tools, but the theory behind them. Its broad scope and unique combination of theory and practice will make it invaluable to almost every investigator of microbial ecology and the environment.

CONTENTS

I. **WHAT, HOW, AND WHY?** (*Updegraff*); II. **FATE IN THE SUBSURFACE WORLD** (*Dickinson; Yates and Yates; Gerba et al.; Harvey; McInerney*); III. **FATE IN THE SURFACE WORLD** (*Hurst; Mohr; Knudsen*); IV. **DISINFECTION** (*Vaughn and Novotny; Clark*); V. **BIOFILMS** (*Olson et al.*)

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February 1991, Hardcover (ISBN 1-55581-031-4), 302 pages, illustrated, index. Member: \$49.00; Nonmember: \$59.00. (Canadian customers add 7% G.S.T.) Shipping charges: U.S., \$1.50/book (1-3 copies) or \$0.75/book (4+ copies); non-U.S., \$2.50/book (1-3 copies) or \$1.25/book (4+ copies). When ordering, specify order number MR-031-4. Charge card orders may also be placed by telephone [(202) 737-3600] or by fax [(202) 737-0368].



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Autoimmunity, Immunodeficiency, Malignancy

Viruses That Affect the Immune System

Edited by **Hung Y. Fan**, *Cancer Research Institute, University of California, Irvine*; **Irvin S. Y. Chen**, *UCLA School of Medicine, Los Angeles, California*; **Naomi Rosenberg**, *Tufts University School of Medicine, Boston, Massachusetts*; and **William Sugden**, *McArdle Laboratory, University of Wisconsin, Madison*

Viral infections in humans or animals almost always affect the host's immune system. Some viruses can infect immune system cells, causing abnormalities such as autoimmunity, malignancy, or immunodeficiency. These major immune system abnormalities and the viruses that produce them compose the focus of this volume, the third in a popular series arising from the ICN-UCI Conferences on Virology.

The book commences with the editors' introductory overview of the major immune system viruses, the retroviruses and the herpesviruses. Four comprehensive sections follow, covering molecular genetics, pathogenic and genetic mechanisms, structures and functions of viral and cell proteins, animal

models, and cell culture systems for immune system virus research. Human and other immunodeficiency viruses, retroviruses including human and murine leukemia viruses, Epstein-Barr virus, and cytomegalovirus are among the pathogens examined in depth.

Molecular biologists, virologists, and researchers into oncology, autoimmunity, and the immunodeficiency syndromes will find this book a valuable addition to the literature.

CONDENSED CONTENTS

- I. Overview (*Fan et al.*)
 - I. Autoimmunity (*Oldstone*)
 - II. Immunodeficiency by Retroviruses (*Wong-Staal; Dinter et al.; Camerini and Chen; Diamond et al.; Page et al.; and Jolicoeur et al.*)
 - III. Oncogenesis by Retroviruses (*Temin et al.; Kelliher et al.; Fan et al.; Coffin et al.; and Greene et al.*)
 - IV. Oncogenesis by Herpesviruses (*Sugden; Speck; and Nelson et al.*)
- Hardcover (ISBN 1-55581-032-2). May 1991. 264 pages, illustrated, index. Member, \$49.00; nonmember, \$62.00 (Canadian customers add 7% G.S.T.). Shipping charges: U.S., \$1.50/book (1-3 copies) or \$0.75/book (4+ copies); non-U.S., \$2.50/book (1-3 copies) or \$1.25/book (4+ copies).

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Genetics and Molecular Biology of Streptococci, Lactococci, and Enterococci

Edited by **Gary M. Dunny**, *University of Minnesota, St. Paul*;
P. Patrick Cleary, *University of Minnesota Medical School, Minneapolis*;
and **Larry L. McKay**, *University of Minnesota, St. Paul*

This new book summarizes the current state of streptococcal genetics research being conducted by microbial geneticists and medical, dental, veterinary, and food microbiologists around the world. Its intended audience includes researchers and educators working in the above disciplines and scientists developing and applying this research in the food, pharmaceutical, biotechnological, and vaccine industries.

Also presented is valuable reference information on genetic techniques such as electroporation, cloning vectors, and other essential guidance for researchers working on streptococci and other gram-positive bacteria.

This book had its origin in the 3rd International ASM Conference on Streptococcal Genetics, June 1990.

Condensed Contents: I. Gene Transfer (11 chapters). II. Molecular and Genetic Analysis of Pneumococci (7 chapters). III. Lactococci: Molecular Biology and Bio-

technology (9 chapters). IV. Structure and Evolution of the M-Protein Gene Family (7 chapters). V. Extracellular Products of Pathogenic Streptococci: Genetics and Regulation (12 chapters). VI. Molecular Biology of Oral Streptococci (12 chapters).

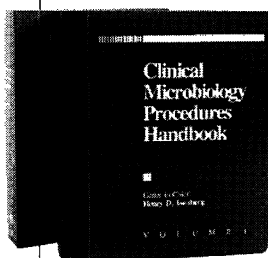
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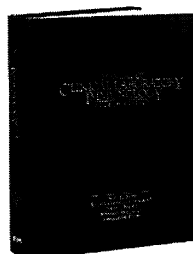
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